

**SESSION II: August 16, 2013**

**Yellow Rail (*Coturnicops Noveboracensis*) Habitat in South-Central Manitoba, Canada: A Preliminary Evaluation at Multiple Spatial Scales**

Kristen A. Martin<sup>1\*</sup>

<sup>1</sup>As part of thesis at University of Manitoba; current address, P.O. Box 216, Edenwold, Saskatchewan, Canada. S0G 1K0

\*Corresponding author. Email: kristen.martin01@gmail.com

Habitat suitability for wetland bird species is often influenced by habitat variables at multiple spatial scales. Understanding which variables influence habitat suitability for yellow rail, and at which spatial scale, would be beneficial for developing a management plan for this species. This study evaluated the influence of local and landscape-scale variables on habitat suitability for yellow rail in south-central Manitoba, Canada. Yellow rail call-broadcast surveys were conducted at 44 wetlands in 2010 and 38 in 2011. All study wetlands had previous yellow rail records, or contained potentially suitable yellow rail habitat. Water depth, vegetation structure measurements, and vegetation community composition data were collected for each survey point (plot scale), and for each wetland overall (patch scale). Habitat amount, fragmentation, composition, and configuration variables were evaluated for a 3-km radius area surrounding each wetland (landscape scale). Over the two years of the study, yellow rails were detected at 35 wetlands, including 25 previously unsurveyed sites. Yellow rail presence was not significantly associated with any plot scale variables, but was positively associated with the proportion of rushes at the patch scale (both years). The amount of marsh habitat in the landscape had a weak positive effect on yellow rail presence in 2011 only. As the mean proportion of landscape-scale marsh habitat was lower for wetlands surveyed in 2011 than for those surveyed in 2010, the importance of this variable may be greater for landscapes with little marsh habitat. South-central Manitoba appears to contain a considerable amount of suitable wetland habitat for yellow rail, and the wetland proportion of rushes may be a key indicator of yellow rail habitat in this portion of their breeding range. The importance of the amount of marsh habitat in the landscape should not be ignored when identifying additional potentially suitable habitat for this species.

**Response of Yellow Rails to Habitat and Landscape Features in the Context of Fire**

Jane E. Austin<sup>1\*</sup> and Deborah A. Buhl<sup>1</sup>

<sup>1</sup> USGS Northern Prairie Wildlife Research Center, Jamestown, ND 58401

\*Corresponding author. Email: [jaustin@usgs.gov](mailto:jaustin@usgs.gov)

The yellow rail (*Coturnicops noveboracensis*) is a focal species of concern associated with shallowly flooded emergent wetlands, most commonly sedge meadows. Yellow rail populations are believed to be limited by loss or degradation of wetland habitat due to drainage, altered hydrology, and fire suppression, factors which have resulted in encroachment of shrubs and change in vegetative cover. We conducted nocturnal call-playback surveys for yellow rails at 64–69 points each of three years at Seney National Wildlife Refuge in the Upper Peninsula of Michigan. We used generalized linear mixed models to assess the effects of habitat and landscape covariates on the detection of yellow rails. Covariates included water

depth, litter depth, graminoids and forb cover, graminoid height, shrub cover, visual obstruction (cover board), time since last fire, and land cover types at 2 scales around each point. At the smaller (163-m radius) scale, quadratic models with maximum and mean water depths best explained the data. At the 300-m scale, the best model contained year and time since last fire (0–2, 3–5, and >5 yr), with highest probability of use for points burned within the previous 2 years. Fire history affected percent open area, litter depth and its variability, variability in graminoid height, and visibility measures. Results from these data and data on fire effects on the plant community and structure will help wetland managers restore and maintain open sedge systems for yellow rails.

## Reconciling Yellow Rail Habitat Use and Landscape Dynamics at Seney National Wildlife Refuge

R. Gregory Corace, III<sup>1\*</sup>, P. Charles Goebel<sup>2</sup>, and Daniel M. Kashian<sup>3</sup>

<sup>1</sup>U.S. Fish and Wildlife Service, Seney National Wildlife Refuge, 1674 Refuge Entrance Rd., Seney, MI 49883, Phone: 906.586.9851x14, E-mail: Greg\_Corace@fws.gov

<sup>2</sup>The Ohio State University, School of Environment and Natural Resources, Ohio Agricultural Research and Development Center, 1680 Madison Avenue, Wooster, OH 44691

<sup>3</sup>Wayne State University, Department of Biological Science, 1360 Biological Science, Building, Detroit, MI 48202

\*Corresponding author

Wetland loss and degradation have been cited as threats to Yellow Rails (*Coturnicops noveboracensis*). While wetland manipulation and conversion are important to consider in habitat planning and management, a more pervasive threat is the alteration of ecological processes, such as fire and hydrology. It is these and other ecological processes that produce the natural range of variation in vegetation structure and wetland function, critical components of Yellow Rail habitat. At Seney National Wildlife Refuge in the Upper Peninsula of Michigan we have quantified the fire history of the area while other, unrelated, studies have quantified Yellow Rail use of burned wetlands. Whereas Yellow Rails prefer recently (<5 yr) burned wetlands, we suggest a higher pre-EuroAmerican (1707-1859) fire return interval (FRI) of 24-33 years for the area as shown via our study of pine forests found in the matrix of wetlands, with a fire rotation (time it takes for an area the size of the refuge to burn) of between 50-100 years. Although some small wetland fires likely were unrecorded in our data, it is improbable that any given area provided Yellow Rails habitat continuously. Rather, we suggest the mosaic of vegetation patterns produced on the landscape via climate-driven, mixed-severity wildfire allowed for more spatially dynamic rail habitat over time. In this talk we characterize landscape dynamics based on our findings of the scale and timing of wildfires, identify limitations to this work, and discuss alternative scenarios as they relate to habitat needs of Yellow Rails. This exchange provides an example of “evidence-based” land management that integrates the mission of the refuge with the broader goals of the National Wildlife Refuge System, the *Refuge Improvement Act* (1997), and the *Biological Integrity, Diversity, and Environmental Health Policy* (2001), while identifying opportunities for future research, including rail use of benchmark wetlands.

## **Notes on Molt and Plumages of Yellow Rail (*Coturnicops Noveboracensis*)**

Donna L. Dittmann<sup>1\*</sup> and Steven W. Cardiff<sup>1</sup>

<sup>1</sup>Museum of Natural Science, 119 Foster Hall, Louisiana State University, Baton Rouge, LA 70803

\*Corresponding author: Email: donnaldittman@gmail.com

A series of recent specimens of known age/sex from the wintering grounds in southwestern Louisiana allows reassessment of two fundamentally important aspects of Yellow Rail biology: molt phenology, and age/sex variation in plumage and morphometrics. Previously published descriptions of molt phenology indicate that the definitive and basic 1 (formative) molts occur entirely on the breeding grounds or during molt-migration stops at northern breeding latitudes. However, our analyses confirm that both adult and juvenile Yellow Rails on/near the wintering grounds exhibit active body molt involving a significant replacement of body feathers, with some individuals also replacing some to all rectrices. Using specimens of known sex and age, we describe “aspect” of different plumages observed on the wintering grounds, and review reliability of plumage-age characters published by Pyle (2008). We also evaluate whether mensural characters can be used to identify an individual to sex. These new specimen-based insights will hopefully improve accuracy in age/sex determinations by researchers handling Yellow Rails and monitoring population demographics.